



# **COTTONWOOD**

## **STORMWATER MANAGEMENT PLAN**

Prepared for:  
City of Cottonwood  
Revised April 2008

Prepared by:  
PUBLIC WORKS DEPARTMENT  
1490 WEST MINGUS AVENUE  
COTTONWOOD, AZ 86326  
Phone: 928 634-8033 FAX: 928 634-7285

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STORM WATER MANAGEMENT PLAN  
DRAFT**

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## **GLOSSARY**

ABOP	Antifreeze, Batteries, Oil & Paint
AAC	Arizona Administrative Code
AZPDES	Arizona Pollutant Discharge Elimination System
BMP	Best Management Practices
DCIAs	Directly Connected Impervious Areas
GIS	Geographic Information System
HHW	Household Hazardous Waste
MEP	Maximum Extent Practicable
MIS	Management Information System
MS4	Municipal Separate Storm Sewer System
PHF	Pesticides, Herbicides, Fertilizers
P2	Pollution Prevention
SIC	Standard Industry Classification
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan

# **COTTONWOOD STORM WATER MANAGEMENT PLAN DRAFT**

## **PURPOSE**

The Storm Water Management Plan (SWMP) is designed to limit, to the maximum extent practicable (MEP), the discharge of pollutants from the Cottonwood storm drain system. The development and implementation of the SWMP is to fulfill requirements of storm water discharges from a small Municipal Separate Storm Sewer System (MS4) in accordance with Section 402(p)(3)(B) of the Federal Clean Water Act, and Arizona Storm Water Regulations (*AAC Title 18, Chapter 9, Articles 9 and 10*). This SWMP was developed to comply with Arizona Pollutant Discharge Elimination System (AZPDES) permit AZG2002-002.

## **SWMP COORDINATION**

Agency: Cottonwood, Public Works Department  
Contact: Tim Costello, City Engineer, 928.634.8033

## **SWMP REVIEW AND MODIFICATION**

Cottonwood has prepared this SWMP to meet the requirements and conditions of Parts IV and VI of the Arizona general permit. This SWMP includes the best management practices (BMPs) intended to reduce to the MEP, the quantity of storm water and the discharge of pollutants to the storm drain system. The SWMP will be reviewed on an annual basis and any changes or modifications will be described and submitted to ADEQ as part of the Annual Report. The first report is due September 30, 2004 covering the period from March 10, 2003 to June 30, 2004, and annually thereafter. This review will include the following:

- A review of the status of program implementation and compliance
- A review of monitoring data, any changes in monitoring methods and parameters, and an assessment of the overall monitoring program.
- A review of any revision or change of BMPs during the year and an assessment of the effectiveness of such revision
- An overall assessment of the goals and direction of the SWMP and effectiveness of BMPs
- Updated implementation schedule
- Annexed areas located within the permit boundaries and associated BMPs

## **STAFFING AND RESOURCE ALLOCATIONS**

The initial funding for the SWMP will be through the General Fund. During the first permit term the City will evaluate funding mechanisms to support program implementation. The Public Works Department will be responsible for implementing and coordinating all activities associated with the SWMP.

## **SYSTEM OVERVIEW**

Cottonwood is located in Yavapai County and occupies an area of approximately 16 square miles (draft General Plan 2002). Cottonwood is located in the Verde River Watershed. Cottonwood is not in an Active Management Area. The Verde River follows the City boundaries on the east from north to south. The Verde River is a significant resource and is recognized by the Department of the Interior as one of the Nation's most significant free-flowing rivers. It is habitat to 31 special status species, critical habitat to razorback sucker, and has one of only 20 stands of Fremont Cottonwood in the world. Monitoring data from the 2002 Verde Watershed Assessment found the Reach from Sycamore Creek to Oak Creek as attaining all uses.

Five ephemeral/intermittent washes (Mescal Gulch, Del Monte, Railroad, Silver Springs and Little Oak) traverse the City from west to east, ending in the Verde River. These washes along with the Verde River experience flooding during heavy rainfall events. Annual precipitation averages less than 12 inches in the Cottonwood area to as high as 30 inches in the mountain areas. Storm water runoff from the mountains to the southwest of Cottonwood occurs in volumes as high as 16,744 cubic feet per second during 100 year storm conditions. Stream terraces formed by the Verde River cross the City and include fan terraces formed by alluvial sediments coming from the Black Hills and outcrops of the Verde Valley Formation (draft General Plan 2002).

In 1999 Yavapai County was the fastest-growing rural county in the U.S., with populations projected to double by year 2050. Growth at these rates will require sound management to balance the needs of communities for recreation, domestic and industrial interests against the protection of natural resources, habitats and water supplies. Controlling urban runoff from development will be a major focus of this SWMP.

## **PROGRAM SUMMARY**

The SWMP has been developed to meet the terms of the AZPDES permit and consists of the six minimum control measures established by EPA for Phase II storm water discharges. Implementation of these control measures is expected to result in significant reductions of pollutants discharged into receiving watersheds. The six control measures are addressed in separate chapters.

Each control measure contains BMPs necessary for proper storm water management. The BMPs contain specific tasks to meet the objective of that control measure. A total of 23 BMPs are contained in this Plan and will be implemented/completed by the end of the permit term, December 19, 2007. This SWMP is intended to be a living document with BMPs added, revised and/or changed as new management practices arise and other management practices are found inadequate. A schedule, based on the fiscal year, for implementing the BMPs is provided at the end of this section. Preliminary costs for implementing the five-year program are estimated at the following percentages:

- |  |     |
|--|-----|
| • Public education and outreach              | 5%  |
| • Public participation and involvement       | 13% |
| • Illicit discharges and improper disposal   | 22% |
| • Construction site storm water runoff       | 22% |
| • Post-construction storm water management   | 30% |
| • Pollution prevention and good housekeeping | 9%  |

#### Chapter One – Public Education and Outreach Program

This measure is intended to ensure greater public support for the storm water program and greater compliance through education. An informed public can significantly contribute to the success of the program.

In general, Cottonwood is emphasizing education in the SWMP because it is a cost-effective BMP and is proactive in trying to reduce storm water pollutants rather than reactive by treating the storm water pollutants. The BMPs in this chapter include:

- Develop materials for City newsletter – quarterly
- Develop and maintain web pages for storm water education on City website
- Develop articles for City Page feature in local newspaper

#### Chapter Two – Public Involvement/Participation Program

This measure is intended to provide opportunities for the public to play an active role in both the development and implementation of the storm water program. An active community is important to the success of the program. The BMPs in this chapter not only serve to involve the public, but also function to educate the public on storm water issues. The BMPs in this chapter include:

- Evaluate and develop program funding mechanism
- Provide access to NOI and SWMP from storm water webpage
- Involve public in clean-up activities, household hazardous waste disposal, Adopt-a-Street program, etc.

### Chapter Three – Illicit Discharges and Improper Disposal Program

This measure is intended to minimize the illicit discharges into the storm drain system. Illicit discharges are those that are not composed entirely of storm water. Storm drain systems are not designed to accept, process or discharge such non-storm water wastes. Minimizing these discharges can help to prevent pollutants from entering receiving waters. The BMPs in this chapter include:

- Develop ordinance prohibiting non-storm water discharges
- Evaluate significant contributors of non-storm water discharges
- Create and maintain storm water system map
- Develop and distribute information to general public regarding illicit and illegal discharges
- Develop and implement dry weather screening program
- Conduct annual employee training

### Chapter Four – Construction Site Storm Water Runoff Control Program

This measure is intended to minimize polluted storm water runoff from construction activities. Construction activities can contribute significant levels of sediment to storm water runoff if erosion and sediment controls are not implemented. The BMPs in this chapter include:

- Develop and implement construction site runoff control program
- Develop ordinance for construction site runoff control program
- Conduct annual training program for City personnel

### Chapter Five – Post-Construction Storm Water Management Program

This measure is intended to minimize the impact to storm water quality caused by development and redevelopment following construction. The increase in impervious areas caused by development can cause an increase in the type and quantity of pollutants in storm water runoff. Prior planning and design to minimize pollutants in runoff from these areas is an important component to storm water quality management. The BMPs in this chapter include:

- Develop Post-construction BMP Program
- Develop regulatory mechanism for post construction BMPs
- Develop street sweeping program
- Implement site design review procedures
- Land Use Plan update for storm water quality
- Participate in Watershed Partnerships – Verde Watershed Association
- Develop and distribute guidance materials for structural and non-structural controls

## Chapter Six – Pollution Prevention/Good Housekeeping Program

This measure is intended to ensure a reduction in the amount and type of storm water pollutants by establishing routine activities in the operation and maintenance of municipal operations that address storm water runoff. Setting particular guidelines for source controls and materials management is an important component to storm water quality management. The BMPs in this chapter include:

- Program for operations and maintenance of storm water system
- Conduct audits of City facilities
- Develop and distribute guidance materials for structural and non-structural BMPs
- Conduct annual training program



## **IMPLEMENTATION PLAN AND SCHEDULE**

## CHAPTER ONE

### PUBLIC EDUCATION AND OUTREACH PROGRAM

The Public Education and Outreach Program of the Storm water Management Plan addresses increasing public and professional awareness of water quality concerns and BMPs that may be implemented with respect to protection of storm water. The BMPs described in this section of the SWMP include education of the public sector through the use of newsletters, print media, and City website. Public education will introduce the SWMP program and focus on known contaminant sources and how to control these sources.

Objective: Educate the public about the impact of storm water discharges on water bodies and the steps that can be taken to reduce pollutants. Target pollutants are identified to be pet wastes, litter, household hazardous waste, pesticides, herbicides and fungicides (PHF), waste automotive fluids, nutrients, and sediment.

Permit Requirement: Part V.B.1. – Public Education and Outreach

Description of BMPs: Provide the public with educational materials, displays, newsletters and outreach activities regarding the impact of daily activities on storm water quality. Cottonwood will ensure that some of the materials developed are bi-lingual.

- Develop materials for City newsletter – annually
- Develop and maintain web pages for storm water education on City website
- Develop materials for City Page in local newspaper

Goals and Assessment: The following table represents measurable goals for this BMP to be implemented and assessed during the permit term. The purpose of measurable goals is to gauge program effectiveness following the schedule identified.

Year	BMP	Task	Measurable Goal	Target Audience / #s
2003-2004	Column in the City Newsletter / Promote education and awareness	Develop list of storm water topics and text for bi-annual column	Document number and quantities of mailings Start Date: 10/03 End Date: 12/04	Households 3500
2004-2007		Continue annual storm water column	Document number and quantities of mailings Start Date: 01/04 Frequency: Annual	Households 3500
2004	City's Storm Water Webpage/educate public and provide comment mechanism	Create link to storm water page on City website	Document number of visitors to the site Start Date: 12/03 Frequency: continuous	General Public 50
2004-2007	Maintain Webpage	Provide access to storm water links	Document number of pages accessed Restart: 07/07 Frequency: Continuous	General Public 100

#### Additional Information

The City sends out a quarterly newsletter to City residents. A new column will be added to educate the public on storm water related issues. Topics will include pet wastes, culvert maintenance, storm drain identification, household pollutants.

The City maintains a website with information relative to City operations. A webpage will be added addressing storm water issues and City activities related to storm water pollution prevention. The website will be updated on a regular basis.

The City Page is published monthly in the local newspaper the *Verde Independent*. It is a half-page of city news and updates written by the city staff. Storm water articles will be developed for publication bi-annually.

#### Personnel

Tim Costello, Public Works Director, will be responsible for implementing this minimum control measure.

## CHAPTER TWO

### PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM

The Public Involvement and Participation Program section of the SWMP addresses the importance of public involvement with respect to protection of storm water. Community participation provides for broader public support, shorter implementation schedules, a broader base of expertise and the development of important relationships with other community and government programs. The BMPs described in this section of the SWMP include opportunities for the public to play an active role in the development and implementation of the SWMP. Such opportunities include holding open houses, developing a storm water website and a community program to foster public input.

This program will be integrated with the Public Education and Outreach and Pollution Prevention/Good Housekeeping Programs to incorporate education with hands-on programs. The following BMPs describe goals and assessment tasks to be completed by Cottonwood for the Public Involvement and Participation Program.

Objective: Increase public awareness of problems and solutions to storm water pollutant control and encourage participation in education and clean-up activities. Target pollutants are as listed in Public Education and Outreach.

Permit Requirement: Part V.B.2. – Public Involvement and Participation

Description of BMPs: Provide opportunities for public involvement in the development and implementation of the SWMP. Provide additional public awareness of the problems and solutions regarding storm water. Provide public access to the SWMP and NOI and a comment form for the public to provide input.

- Evaluate program funding mechanism
- Provide access to NOI and SWMP from storm water webpage
- Provide public review and comment on SWMP and new ordinances through the public meeting process with the Mayor and Council
- Supply NOI and SWMP to Cottonwood Public Library

Goals and Assessment: Measurable goals for each BMP are to be implemented and assessed during the permit term. The purpose is to evaluate permit compliance and program effectiveness following the implementation schedule to meet annual reporting requirements.

Year	BMP	Task	Measurable Goal	Target Audience / #s
2003	Storm Water Webpage	Provide access to SWMP and NOI	Document materials available Start Date: 12/03 Frequency: Continuous	General Public 25
		Create comment form	Document comments and responses	General Public 25
2004	Storm Water Utility or other funding mechanism/Fund the SWMP program	Evaluate and assess the appropriate funding mechanism for the storm water management program	Document evaluation and recommendations Start Date: 11/03	General Public
2005-2007		Implement funding program	Document program End Date: 06/04	
2005-2007	Solicit public involvement in Adopt-a-Street program	Pick-up road-side trash and litter	Number of clean-ups, number of bags of trash collected; number of persons participating. Start Date: 07/05 Frequency: 1 per Month	General Public and Organized Groups 25
2005-2007	Public process relating to all aspects of SWMP	Adoption of new ordinances	Document the number of public meetings that involved storm water topics Document news articles printed resulting from meetings. Start Date: 11/06 End Date : 06/07	General Public Print Media
2007	Provide access to the NOI and SWMP at the public library	Provide public access to NOI and SWMP	Record the number of request for the document Start Date: 06/07 End Date: Continuous	General Public 15

#### Additional Information

Storm Water Utility or Other Funding Mechanism: The City will evaluate program funding mechanisms such as sales tax, storm water utility, and other types of user fees. A new funding mechanism maybe implemented or the city may continue to fund the program from current funding.

Storm Water Webpage: Provide access to NOI and SWMP. Evaluate the effectiveness of various ways to receive complaints from City citizens. If a complaint is reported regarding the storm drain system it will be directed to the Public Works Office and cataloged in the electronic work order program. The proper City personnel will be notified to investigate the complaint and to follow up.

Personnel

Tim Costello, Public Works Director, will be responsible for implementing this minimum control measure.

## CHAPTER THREE

### ILLCIT DISCHARGES AND IMPROPER DISPOSAL PROGRAM

The Illicit Discharges and Improper Disposal Program section of the SWMP addresses non-storm water flows that are discharged to receiving waters via storm water conveyance systems. The program will implement BMPs to assist in the identification of illicit discharges and removal of these discharges from the system. This program will also focus on prevention of new illicit discharges to the storm water system by means of education, regulations, and through spill prevention and response.

This program will be integrated with the Public Education and Outreach and Pollution Prevention/Good Housekeeping Programs to promote awareness of the importance of protecting the storm water system from illicit discharge and the resultant impact to receiving waters. The following BMPs describe goals and assessment tasks to be completed by Cottonwood for the Illicit Discharges and Improper Disposal Program.

Objective: Identify and eliminate illicit discharges into the storm drain system to reduce the discharge of pollutants into storm water runoff. This will be accomplished by identifying intake and discharge areas of the storm water system; implementing an ordinance; industrial activity review and dry weather screening to identify dry weather flows.

Permit Requirement: Part V.B.3. – Illicit Discharges and Improper Disposal

Description of BMPs: Program will be developed to detect and eliminate illicit discharges, identify sources of non-storm water discharges, build awareness of hazards from illegal discharges, and field screen for non-storm water flows.

- Develop ordinance prohibiting non-storm water discharges
- Evaluate significant contributors of non-storm water discharges
- Create and maintain storm water system map
- Develop and distribute information to general public regarding illicit and illegal discharges
- Develop and implement dry weather screening program
- Conduct annual employee training

Goals and Assessment: The table below represents measurable goals for the BMPs to be implemented and assessed during the permit term. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the schedule identified.

Year	BMP	Task	Measurable Goal	Target Audience / #s
2003-2004	Non-storm Water Discharge Ordinance prohibiting non-storm water discharges	Develop ordinance	Adopt ordinance  Start Date: 07/05 End Date: 06/08	General Public
2006	Evaluate significant contributors of non-storm water discharges	Inventory and assess potential significant contributors	Document inventory and recommendations Start Date: 10/06 End Date: 06/07	General Public 5
		Develop and distribute information regarding illicit and illegal discharges	Document material production and distribution Start Date: 06/07 End Date: 12/07	General Public
2005	Create Storm water management system map/Storm water system planning, and system operation and maintenance scheduling	Review data in the City GIS and create a land use map with an overlay for storm system	Produce map and use for analysis of illicit connections and discharges Start Date: 04/06 End Date 06/08	City Employees 10
2006	Dry Weather Screening Program	Prepare a program to screen outfalls within Cottonwood for dry weather flows	Document program  Start Date: 06/07	City Employees 10
2006-2007		Conduct employee training	Document training and numbers of employees attending	City Employees 10
2006-2007		Implement the dry weather screening program	Document inspections and results annually End Date: Continuous	General Public



### Additional Information

Ordinance: An ordinance or other regulatory mechanism will be developed to prohibit non-storm water discharges to the storm drain system. The city does not expect the following incidental non-stormwater discharges to be significant contributors of pollutants:

- Non-commercial, charity car washes
- Fire fighting
- Water system flushing
- Building washing without added cleaning products
- Irrigation runoff

Evaluate significant contributors of non-storm water discharges: The City will use existing information for industries and businesses within the City to assist with identifying possible locations of non-storm water discharges.

Storm Drain System Map: Create map layer using the City GIS to use for system operations and maintenance, for the dry weather screening program to trace the source and extent of dry weather flows and the particular watersheds these flows may be affecting. The map will show all the Waters of the United States that receive runoff from the stormwater system. The map will be updated as necessary.

Dry Weather Screening: The City will develop and implement a Dry Weather Screening Program to detect and address non-storm water discharges to the storm drain system. City employees will be trained annually. Program will rely on citizen complaints and employee discoveries during the course of their other duties.

Enforcement: If an illicit discharge is discovered or reported, the city will investigate within 15 days of its detection. The investigation will rely on vision and smell to identifying the discharge. Until a new ordinance better addresses these types of discharges, existing local ordinances (8.04.020 Offensive Water and 8.12.020 Public nuisance) and ARS 13-2917(A)(1)(2)(D) Public Nuisance can be used to prosecute offenders. Enforcement will be handled on a case by case basis.

Personnel: Tim Costello, Public Works Director, will be responsible for implementation of this minimum control measure.

## CHAPTER FOUR

### CONSTRUCTION SITE STORM WATER RUNOFF CONTROL PROGRAM

The Construction Site Storm Water Runoff Control Program section of the SWMP addresses water quality concerns for construction sites greater than or equal to one acre. Polluted storm water runoff from construction sites often flow to storm drains and into receiving waters. This runoff can contribute more sediment to receiving waters than can be deposited naturally during several decades. The resulting situation can cause physical, chemical and biological harm to receiving waters. The BMPs described in this section of the SWMP include the development of a construction site program designed to reduce pollutants in storm water runoff from construction activities. This program will include procedures for construction site plan review, site inspections and notification of specific requirements to all construction site owners/operators.

This program will also be integrated with other facets of the SWMP to provide information and up-to-date BMPs to the public, construction site operators, etc. The following BMPs describe goals and assessment tasks to be completed by Cottonwood for the Construction Site Storm Water Runoff Control Program.

Objective: Reduce erosion, sediment transport and other pollutants caused by construction activities. Target pollutants are construction trash, sediment, and erosion from construction sites.

Permit Requirement: V.B.4. – Construction Site Storm Water Runoff Control

Description of BMPs: Program will be developed to reduce runoff pollution from construction related activities through education, ordinance, and site plan review and inspection.

- Develop ordinance for permitting discharges from construction sites of 1 acre or greater
- Develop and implement construction site runoff control program
- Develop and conduct annual training program for City personnel
- Review all site plans for land disturbances over one acre.

Goals and Assessment: The table below represents measurable goals for the BMPs to be implemented and assessed during the permit term. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the schedule identified.

Year	BMPs/Goal	Task	Assessment	Target Audience / #s
2005	Develop ordinance for storm water runoff control program	Review available ordinances and adapt to City requirements	Adopt ordinance Start Date: 07/05 End Date: 06/06	Developers / Contractors 25
2006	Construction Site Program	Develop plan review and site inspection program	Document permits, inspections Start Date: 07/05	Developers / Contractors and Commercial / Industrial Businesses
2007		Implement program	Document reviews and inspections End Date: Continuous	Developers
2006-2007	Training program for City personnel and contractors	Develop standards and provide training to building site inspectors	Document training and numbers of personnel trained Start Date: 07/05 Frequency: Annual	Developers / Contractors and City Employees 12
2006-2007		Assemble and distribute standards to contractors	Document distribution of materials to numbers of contractors Start date: 06/07 End Date: 06/08	Developers / Contractors 6

#### Additional Information

Ordinance for Construction Runoff Control Program: The City has developed a Grading Ordinance, combined with the Retention Ordinance, are the tools to regulate discharges from construction sites. This is notwithstanding the controls of the state's Construction Activity General Permit.

Construction Site Runoff Control Program: As a routine part of development review, the Engineering Department reviews all new site plans. Sites over one acre of disturbance are requested to submit their stormwater management plan. Site inspections by Public Works staff include a visual check of stormwater controls. Enforcement per the grading ordinance of the zoning code is by issuing a stop work order or denial of a certificate of occupancy.

Training of Employees and Contractors: The City will prepare training pamphlets for contractors and train employees for new program procedures. The best stormwater education opportunities for the development community are their interaction with the city staff during the review process and the subsequent construction process using their professionally prepared stormwater management plan.

Personnel

Tim Costello, Public Works Director, will be responsible for implementing this minimum control measure.

## CHAPTER FIVE

### POST-CONSTRUCTION STORM WATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Post-Construction stormwater management for new development and redevelopment addresses the importance of stormwater runoff management following construction. Substantial impacts of post-construction runoff are caused by an increase in the type and quantity of pollutants in stormwater runoff. The BMPs described in this section of the SWMP include the development of structural and non-structural stormwater runoff strategies and the development of post-construction programs that consider stormwater quality impacts of new development and redevelopment projects that disturb over one acre of land.

The following BMPs describe goals and assessment tasks to be completed by Cottonwood for Post-Construction Storm Water Management in New Development and Redevelopment.

Objective: Reduce the discharge of pollutants to storm water runoff from areas of new development and redevelopment after construction is completed. Provide for long term BMPs and inspection programs to improve storm water quality.

Permit Requirement: V.B.5. – Post-Construction Storm Water Management in New Development and Redevelopment

Description of BMPs: Program will be developed to reduce runoff from post construction activities using available materials and updating, incorporating storm water quality into the land use planning element of the City General Plan and through guidance and education.

- Develop Post-Construction BMP Program
- Review existing ordinance/develop new ordinance
- Implement site design review procedures
- Land Use Plan update for storm water quality
- Watershed Partnerships
- Develop and distribute guidance materials for structural and non-structural controls

Goals and Assessment: The table below represents measurable goals for this BMP to be implemented and assessed during the permit term. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the schedule identified.

Year	Goal	Task	Assessment	Target Audience / #s
2004-2005	Structural and Non-structural BMPs	Identify areas that require structural BMPs	Document list of capital improvements	Developers / Contractors / City Employees
		Develop guidance document Start Date: 04/05 End Date: 06/05		
2003-2007	Watershed Partnerships/Participate in the preservation of waters downstream of the City	Continue participating in the organization	Attend a minimum of two meetings annually  Start Date: 07/04 Frequency: 2 per month	City 1
2006	Land Use Plan	Update General Plan, Land Use Element	Document revisions  End Date:12/03	General Public
2007	Post-construction BMP program	Review existing policies and procedures and develop program	Document current practices and program development Start date:07/05 End date: 06/06	Developers / Contractors / City Employees 12
2007	Develop regulatory mechanism for post-construction program	Review existing ordinances; update with new ordinance if needed	Document inspections and action items Start date: 07/05 Frequency: weekly	Developers / Contractors / City Employees 12

### Additional Information

Post-Construction Program: A one on one educational program for developers, architects and engineers will be combined with the city's Code Review Board (preplan review coordination) to minimizing storm water impacts caused by new development and redevelopment. This program requires coordination with the development community and city planners to incorporate stormwater controls and to minimize directly connected impervious areas (DCIAs). Minimizing DCIAs include various methods designed to reduce the volume of runoff.

Ordinances will be reviewed and revised as needed to allow for open space design within residential zones. Conservation easements for open spaces and buffers will also be evaluated as part of the program considering maintenance (weed control), recording and notification obligations, and approval process for regulating activities in these areas.

Long term maintenance responsibilities for structural BMPs like retention basins and drywells shall be the responsibility of the property owners. The city will take action to notify and cause

private owners of structural BMPs correct maintenance deficiencies that hinder the proper performance of those BMPs in accordance with the plans originally approved by the city.

General Plan Land Use Element: Water quality impacts of new and significant redevelopment will be addressed in the Land Use Element of the General Plan. Utilizing structural and/or non-structural BMPs (ie. setbacks, swales, etc.) will help to prevent many storm water quality problems. Coordination with the Planning Department to incorporate storm water controls is an important element to this program. Overlay storm systems in open spaces to identify locations to target for protection.

Structural Controls: The City will evaluate current practices and identify areas that require structural controls. A list of potential capital improvements will be created through the inspection process. Capital improvements will be budgeted for construction through the City's Capital Improvement Process.

Watershed Partnerships: The City will assess the importance and benefits of participating in the partnerships which are active in the watershed. The City is currently active in these watershed groups:

- Verde Watershed Association
- Yavapai County Water Advisory Committee
- Northern Arizona Municipal Waters Users Association

Personnel

Tim Costello, Public Works Director, will be responsible for implementing this minimum control measure. Attending the watershed partnership meetings are the Mayor and Council and the Assistant to the City Manager.

## CHAPTER SIX

### POLLUTION PREVENTION/GOOD HOUSEKEEPING PROGRAM FOR MUNICIPAL OPERATIONS

The Pollution Prevention/Good Housekeeping Program of the Storm Water Management Plan addresses routine activities in the operation and maintenance of drainage systems, roadways, parks and open spaces, and other municipal operations to help ensure a reduction in pollutants entering the storm drain system. This Program includes a training component to prevent and reduce storm water pollution from municipal operations. The BMPs in this program include source controls and materials management. Source controls are BMPs designed to prevent or reduce pollutants at the source and include BMPs such as storm drainage system maintenance and flood control projects. Materials management BMPs are designed to reduce pollutants with non-structural controls through programs such as, pesticide use, pet waste removal, household hazardous waste management, trash management, and spill prevention.

This program will also be integrated with the Public Education and Outreach, Public Involvement and Participation and Illicit Discharges and Improper Disposal Programs to promote awareness of water quality concerns in performing routine roadway maintenance and operation, municipal yard operations, wastewater treatment plant operations, and other practices. The following BMPs, goals and assessment tasks are to be completed by Cottonwood for the Pollution Prevention/Good Housekeeping Program.

Objective: Reduce potential pollutants to watersheds by limiting/controlling the pollutants at the source.

Permit Requirement: V.B.6. – Pollution Prevention/Good Housekeeping

Description of BMPs: Program will be developed to control pollutants in runoff from City operations and maintenance activities including parks and open spaces, fleet and building maintenance, street sweeping operations, and storm water system maintenance.

- Develop a program for operations and maintenance of storm water system
- Conduct audits of City facilities
- Conduct annual training for City employees
- Develop a street sweeping program

Goals and Assessment: The table below represents measurable goals for this BMP to be implemented and assessed during the permit term. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the scheduled identified.



Year	BMPs/Goal	Task	Assessment	Target Audience / #s
2004	Operations and Maintenance program for storm water system including a street sweeping program	Evaluate current program and assess if practices meet regulatory requirements	Document the program. Document number of streets swept and catch basins and pipe outfalls cleaned. Start Date: 07/04 Frequency: weekly	City Employees 20
2004-2007		Update program and train employees annually	Frequency: annual	City Employees 20
2006	Audit City Facilities for environmental compliance	Conduct audit of the City's maintenance, wastewater treatment, and public works for compliance with regulations	Document inspections  Start Date: 07/04 Frequency: Annual	City Employees 20
2007	Develop long-term inspection procedure to reduce floatables and other pollutants from municipal operations.	Inspect stormdrain system annually. Assist citizen groups with litter control. Parks Department picks up litter daily in city parks.	Document the inspection effort and maintenance effort regarding clean-up activities. Start Date: 06/07 Frequency: On-Going/annual	City Employees 20

Operations and Maintenance of Storm Water Control System: The City will review current practices and procedures and update said procedures for stormwater quality control. Waste removed from the stormdrain system and street sweepings with properly disposed of in a roll-off container that will be hauled to the landfill. Floatables will be disposed in trash containers that will be hauled to the landfill.

City Facilities Audit: The City will audit all owned properties and facilities to comply with the BMPs selected for applicable minimum control measures.

Annual Training: The City will conduct training for City employees for proper operation and maintenance of storm drain system.

Multi-Sector Permit: The Cottonwood Wastewater Treatment Plant and the Public Works Yard are covered by a multi-sector general permit. Pollution prevention and good housekeeping activities at these locations are covered by that permit.

Personnel

Tim Costello, Public Works Director, will be responsible for implementing this minimum control measure.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

  
Signature

04/15/08  
Date

Timothy J. Costello  
Name (printed)

Public Works Director  
Title